

What can an NP or PA do for a bone health program?

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Disclosures

- ☐ I have no disclosures to report

Learning objectives

- **Explore reasons fragility fracture patients are not receiving appropriate osteoporosis treatment**
- **Describe the importance of orthopaedics in secondary fracture prevention and improving the care of fragility fracture patients**

Osteoporosis crisis

- **Google search - About 4,240,000 results (0.54 seconds)**
- **Focus on AOA critical issues P Anderson et al (2019)**
- **Failure to treat those who have sustained a fragility fracture has been described as “scandalous” by J Kanis et al(2014) and a “crisis” by S Khosla and E Shane (2016); it has generated a worldwide “call to action” Khosla et al(2016)**

Causes of the Bone Health-Care Crisis

- **Terminology**
- **Classification of Osteoporosis**
- **Multiple Guidelines**
- **Testing**
- **Fear of Drug Complications**
- **Inadequate referral for care for patients with osteoporosis**

Causes of the Bone Health-Care Crisis

○ Terminology

- Fragility fracture and osteoporosis are poorly defined
 - “anybody who fell like I did would have fractured”
 - “but my other doctor said I just have osteopenia”

Osteoporosis definitions

- **Operational definition: a BMD T-score ≤ -2.5 at the lumbar spine, femoral neck, total proximal femur or .3 radius**
 - World Health Organization. Technical Report Series 843; WHO, Geneva.1994
- **Patient with osteopenia and elevated fracture risk using FRAX**
- **Clinically, osteoporosis can be diagnosed if there is a low trauma fracture independent of BMD**
 - Camacho, et. al., (2020)

Causes of the Bone Health-Care Crisis

○ **Classification of osteoporosis**

- Dependent on bone mineral density
- Misses presence of fracture
- Osteoporosis is low bone mass and micro architectural deterioration
- Elevated fracture risk is the increased probability of a patient sustaining a fracture that may result from a non-bone issue leading to falls and fractures

Causes of the Bone Health-Care Crisis

○ Testing

- Variation in vitamin D assays

Component	Ref Rng & units	2/10/2021	2/25/2021
Vitamin D3, 25-hydroxy		19	22
Vitamin D2, 25-hydroxy		26	8
Total Vitamin D, 25-hydroxy HPLC	30-80 ng/mL	45	30
Total Vitamin D, 25-hydroxy ELA	30-80 ng/mL	29(L)	23(L)

- DXA incorrect in 40% of cases
 - D Krueger et al (2019) J Clin Densitom.

Causes of the Bone Health-Care Crisis

○ **Conflicting recommendations**

- How much calcium and vitamin D is really needed?

○ **Multiple guidelines**

- AACE
- Endocrine Society
- AFP
- ACR

Causes of the Bone Health-Care Crisis

○ **Fear of drug complications**

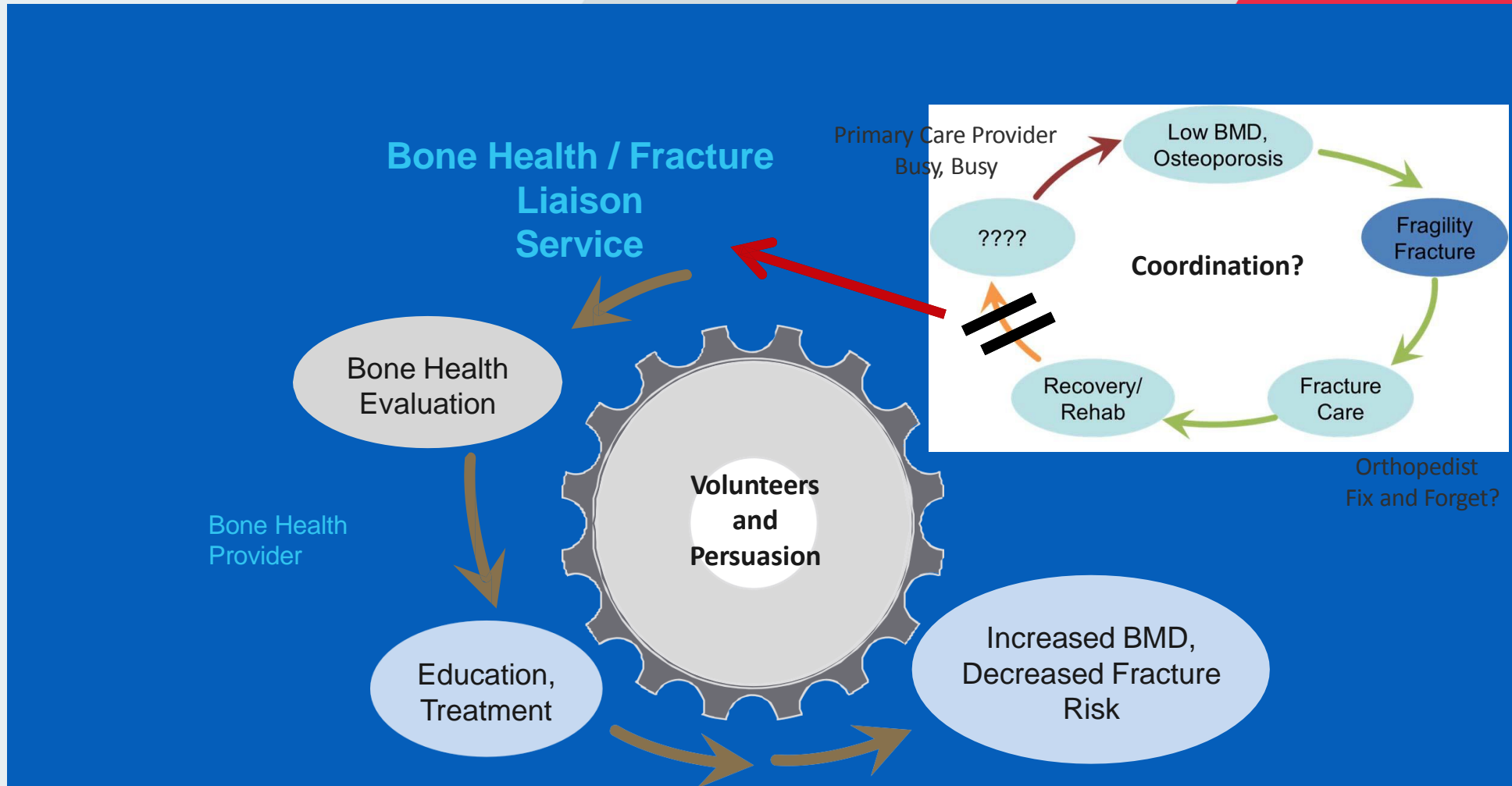
- Atypical femur fractures
- Osteonecrosis of the jaw
- “I heard all of those medications just build brittle bone”
- “I have a friend whose jaw fell apart while taking the medication”
- “How can a medication cause fractures when it is supposed to prevent them”

Causes of the Bone Health-Care Crisis

○ Inadequate referral for care for patients with osteoporosis

- Failure of orthopedic surgeons to recognize poor bone health even following fracture
- Orthopaedists self reported reasons why they felt uncomfortable prescribing osteoporosis medications
 - Limited experience with them and Side effects: AFF, ONJ and esophageal erosion
- 95% of orthopaedists in this group favor starting FLS to address this – Barton et al (2019)

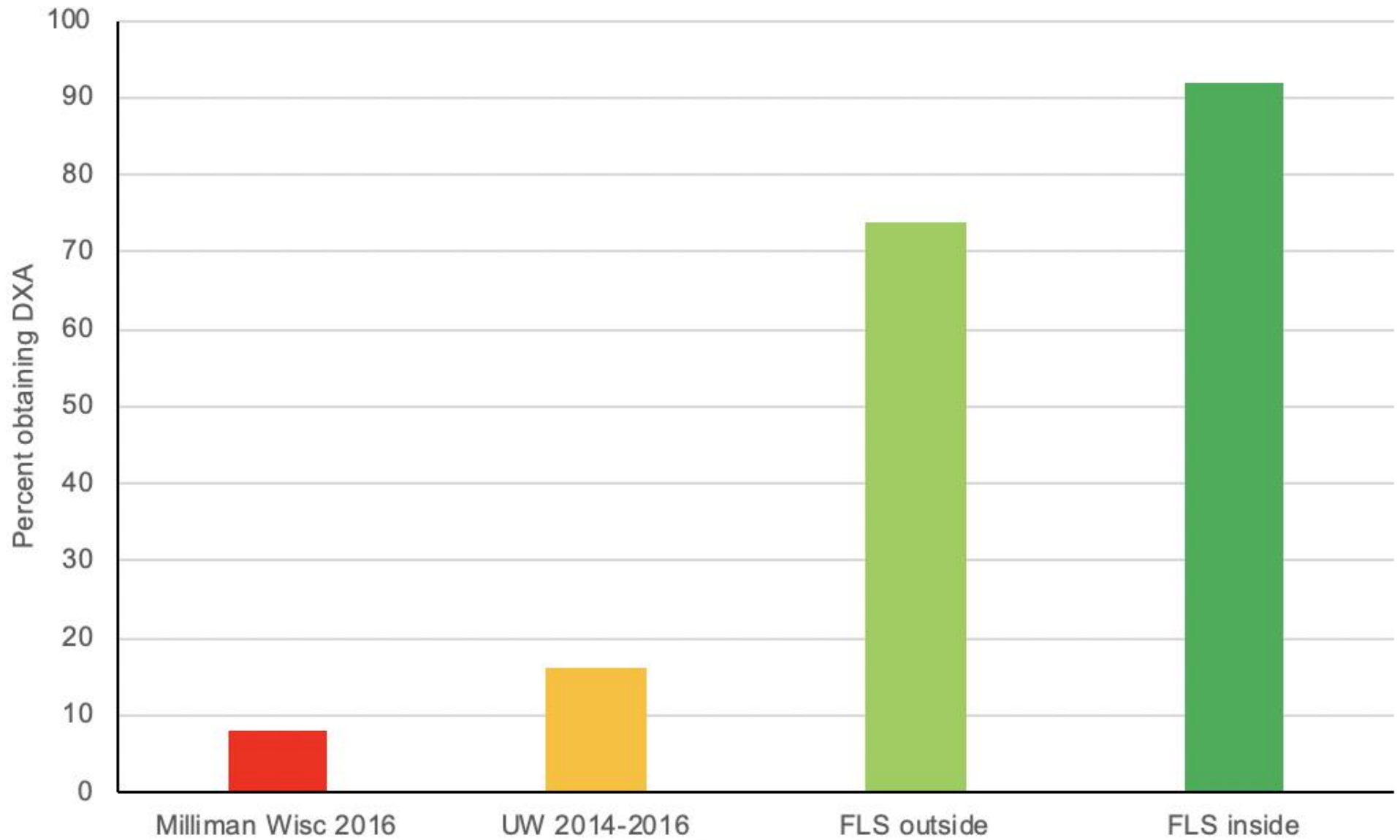
○ Breaking the Fragility Fracture Cycle



Current status

- **Only 9% of women in the US who suffer a fracture are screened for osteoporosis within 6 months of a new fracture**
- Milliman 2021 Medicare cost of osteoporotic fractures report for medicare beneficiaries 2016 (commissioned by NOF)

BMD Measurement After Fracture



FLS follow up meta analysis

74 studies(16 RCTs and 58 observational studies)

○ Patients receiving care from FLS had higher rates of :

- BMD measurement 48.0% vs 23.5%
- Treatment initiation 57.0% vs 34.1%
- Greater treatment adherence 57.0% vs 34.1%
- Lower Refracture rate 6.4% vs 13.4%

Practice Patterns and Performances in US Fracture Liaison Programs

an analysis of Own the Bone

- **32,671 unique patient records**
- **Anti osteoporosis treatment was recommended to 72.8% of patients and was initiated in 12.1%**
 - 60% of patients for whom treatment was not initiated were reported to have treatment planned or to have been referred to their primary care

- D Dirschl (2018) JBJS

Geisinger Health System High-risk osteoporosis clinic (HiROC)

- **Inpatient HiROC treatment rate for eligible patients 75.4% (338/448)**
- **GHS PCP treatment rates 13.8% (27/196)**
- **Dunn et al (2018) Osteoporos Int**

It's time to Own the Bone

- **Sentinel event**
 - An osteoporosis related fracture increases the risk of subsequent fractures
- **Opportunity to manage bone disease**
 - <20% of patients with fractures have DXA or 25(OH) D level checked within 1 year ¹
 - Treatment reduces subsequent fractures by 30-40%²
 - Treatment with anabolic osteoporosis medications reduces subsequent fractures by 70-80% ^{3,4}

¹Leslie Osteo Int (2012); ²Bawa JBJS 2015; ³Bone JCEM 2018; ⁴Cosman JBMR 2018

The Program Measures

- **Nutrition Counseling**
 - Calcium
 - Vitamin D
- **Physical Activity Counseling**
 - Weight-bearing and muscle-strengthening exercise
 - Fall prevention education
- **Lifestyle Counseling**
 - Smoking Cessation
 - Limiting excessive alcohol intake
- **Pharmacology**
 - For the treatment of osteoporosis
- **Testing**
 - Dual Energy X-Ray Absorptiometry (DXA)
- **Communication**
 - Physician referral letter
 - Follow-up note and educational material to patient



FLS versus BHO

- **Treating the same disease in a similar patient population with a different urgency**
- **Therefore, it will be seamless to add these patients to a well established FLS program thus transforming to a Bone Health Program**
- **NP/PA leading these programs can help write the narrative as BHO guidelines are not yet formalized**

Summary

- Treatment of osteoporosis after a fragility fracture remains low for a myriad of reasons
- Orthopaedists treat the fracture and can take ownership of addressing this gap in care by starting bone health programs of which PAs and NPs are well suited to run

So...What can an NP or PA do for a bone health program? A LOT!

- **“Having a bone health program at our institution that provides the medical management of bone health allows me to focus on the surgical treatment of the bone”**
- **“The Bone Health program was the missing link in my surgical practice. Bone quality can determine success or failure for spine surgery, and with the Bone Health program we now have a pathway to not just identify, but treat compromised bone quality. It is now hard to imagine my practice without the Bone Health program as a part of it.”**

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